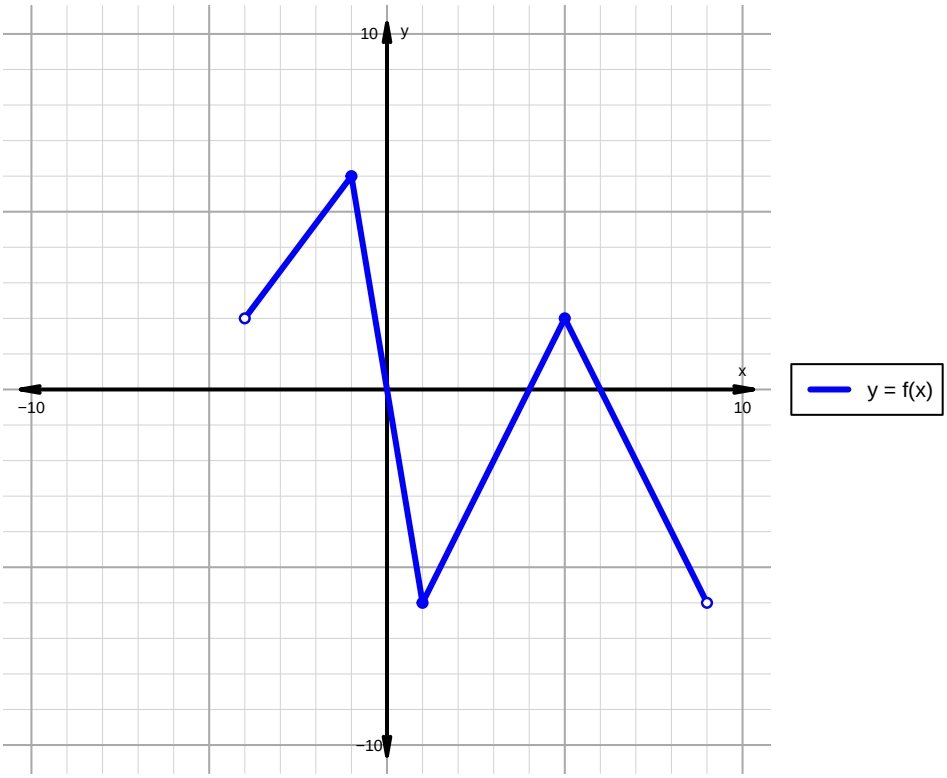
Name: Date:

Intervals, Transformations, and Slope Solution (version 32)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4, 0) \cup (4, 6)$
Negative	$(0, 4) \cup (6, 9)$
Increasing	$(-4, -1) \cup (1, 5)$
Decreasing	$(-1, 1) \cup (5, 9)$
Domain	$(-4, 9)$
Range	$(-6, 6)$

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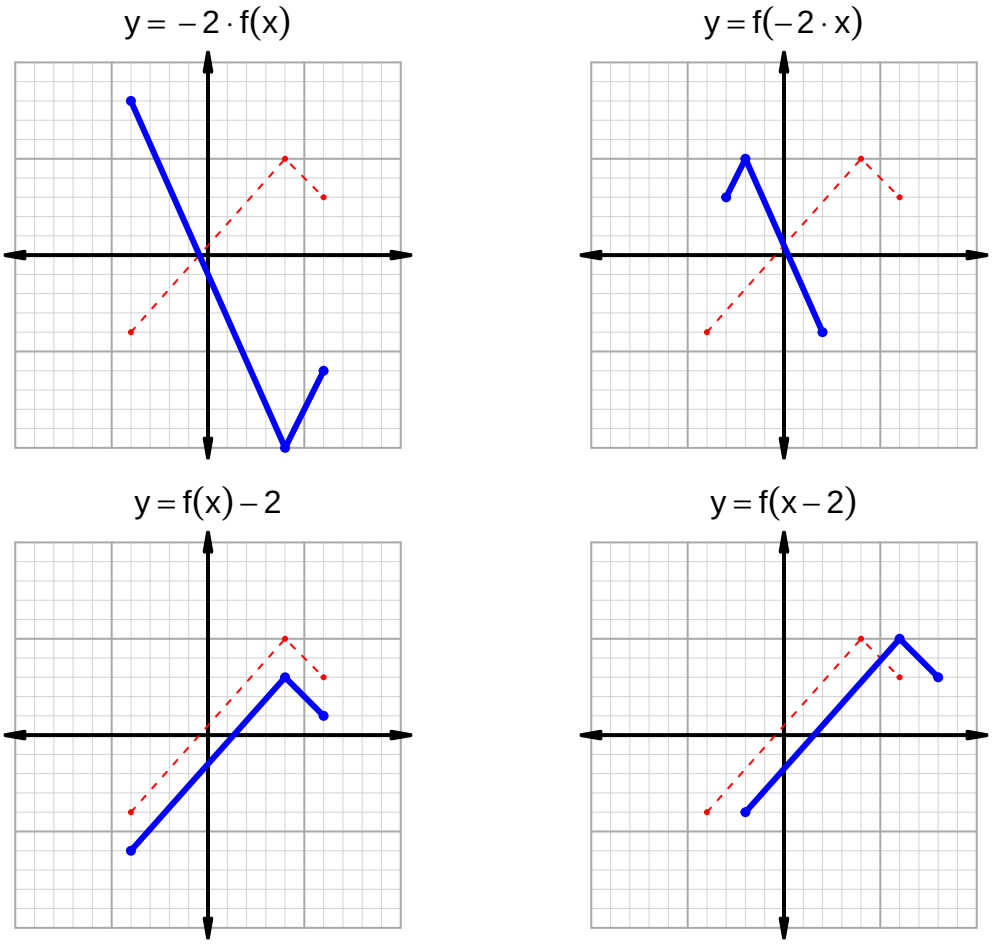
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 48$ and $x_2 = 93$. Express your answer as a reduced fraction.

x	$g(x)$
22	93
48	22
85	48
93	85

$\frac{g(93)-g(48)}{93-48} = \frac{85-22}{93-48} = \frac{63}{45}$

The greatest common factor of 63 and 45 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{7}{5}$$